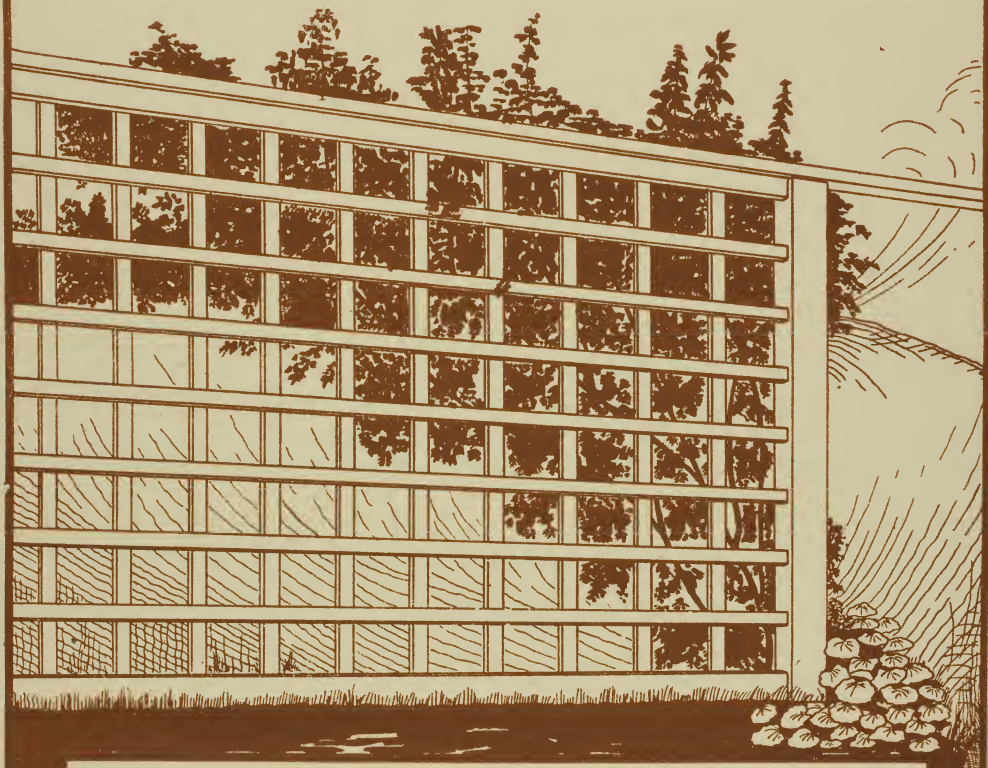
California Garden



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JANUARY, 1922 TEN CENTS

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The California Garden

Published Monthly by the San Diego Floral Association
One Dollar per Year, Ten Cents per Copy

Vol. 13 POINT LOMA, CALIFORNIA, JAN, 1922 No. 7

More Anent Federal Quarantine 37

When Quarantine 37 was placed in effect by the Federal Horticultural Board some time ago a certain prominent importer of plants took up the cudgels in defense of the nurserymen of this country, and a considerable amount of maudlin sympathy was extended to them for the regulation which, according to this particular importer, was a body blow to the nursery industry. We believe that we are safe in saying that the menace existed principally in the disordered imaginings of this firm, as the quarantine has been in force long enough now so that we have been enabled to observe the effect upon the nurserymen as well as upon others interested. One of the results of enforcement of this quite radical measure has been that the nurseries growing stock of the sorts formerly imported from Europe have enjoyed a very decided increase in the volume of their business—the kind of stimulus which many dissimilar industries have in the last few years when the European supply of whatever commodity they produced was cut off for one reason or another. It has had a very beneficial effect on many kinds of businesses in this country to be thrown upon their own resources—the only way we as a nation would become in a measure industrially independent of Europe. In fact, rather oddly, now that this stimulus to the nursery business—that is, the producing side of it—is becoming more and more pronounced, the Federal Government has been accused of passing this measure in lieu of building a tariff wall to protect "home industry." However, the Federal Horticultural Board is not undertaking to perform any such function, being fully occupied in its endeavors to protect the horticultural interests—including the nursery business—against a menace far greater than that of foreign competition—that of the major pests of the world, the admission of which would spell ruination to nurseries, farms, orchards, and ornamental gardens. But even now there are here and there men of short vision who still consider the quarantine to be adverse to the best interests of the firms engaged in the growing of nursery stock. One writer in a trade paper not long ago naively asserts his belief that a "rigid but sure inspection" would serve all the purposes of such a measure as Quarantine 37. The Federal Government for seven years previous to the passage of this quarantine, thoroughly tested the merits of a system of inspection and certification as opposed to a quarantine. During that period shipments from the principal European countries which exported planting material to the United States were subjected to a "rigid inspection" both by the foreign officials and by quarantine officers in this country.

The results of this seven years of observation of the matter constitute the principal reasons for establishing the quarantine. As elsewhere in inspection work the human element has to be considered, and while horticultural inspection represents a saving of hundreds of dollars to the industry, it has been demonstrated that the most careful inspection is not always 100% perfect. The fact that 150 kinds of insects were taken in quarantine on plants arriving from Holland alone, being taken from 1,050 infested shipments, and from Belgium over 60 kinds on over 1,300 infested shipments, from Japan 108 kinds of insect pests from only 291 infested shipments besides similar findings from other plant shipping countries, meant to the officials at Washington that it was an absolute certainty that some pests had probably escaped the scrutiny of even the most careful inspectors, especially as in many instances certain stages at least, of the insects would be almost microscopic in size.

California claims quite properly to be the pioneer state in protective legislation designed to protect against the introduction of injurious insects and plant diseases. Practically all of the measures which have been adopted by this state, which is, incidentally, protecting not only itself but the United States, consist of making contraband all possible hosts of foreign injurious insects or plant diseases, rather than to rely entirely upon inspection as a protective measure. A system coupling together quarantines of this sort, with careful inspection explains why in the years that California has been enforcing its quarantine laws, no major pest has entered the state. Federal quarantines are predicated upon such a basis, and it would seem therefore to be the only safe and thoroughly protective system which could be depended upon.

Patronize the Garden Advertisers.

ROSE STOCKS AND ROOT SYSTEMS

(By H. Harold Hume, Glen St. Mary, Florida)
(In the American Rose Annual, 1921.)

(Continued from December Garden)

To what has gone before may be added a few remarks on the peculiarities of a few rose stocks and possible rose stocks.

Perhaps the most commonly used and most widely tried out rose stock in America at this time is Manetti (Rosa chinensis). It has a wide range of adaptability, both as pertaining to soil and to climate. It is used extensively as a rose stock in California, Ohio, Florida, and in the East. It is largely used for growing roses under glass. Cuttings root readily, producing a moderate rather shallow root system, and the roots are pliable—an advantage in packing. Manetti sprouts badly from below the union unless disbudded.

Mme. Plantier (a form of Rosa chinensis) is not commonly used, but at least one nursery firm has grown many thousands of roses on this stock for years. It is more difficult to root under open ground conditions than Manetti but produces a better root system than that variety. Its crooked growth makes it more difficult to graft, and it does not lend itself readily to budding because of this same feature. But fine roses can be and are grown upon it. The roots are quite brittle, and more easily broken in packing and handling than are those of Manetti. In vigor of growth imparted to the top it has some advantage over Manetti.

The Cherokee rose has often been mentioned as a rose stock, but no one who has tried it, commonly known as Double or Evergreen Cherokee, rather extensively. It is, perhaps, a cross between Banksia and Cherokee. Noisette, Tea, and Hybrid Tea roses have been worked on it with splendid results. Roses grown on it outgrow and outbloom those on Manetti and Mme. Plantier. For light, sandy soils this form of Cherokee or common White Cherokee (tried out less extensively) have no superiors. In the lower South a rosebed, with any particular soil preparation, planted with bushes on Cherokee stock, will do much better than one in which the soil was made with the utmost care and without regard to expense and planted with bushes on Manetti stock, for instance.

There may be other stocks that will do as well, but up to this time, so far as known, it has not equal. The roots go deep and far. The three-year Manetti and a three-year Mme. Plantier had root systems extending over an area of twenty-five square feet the Mme. Plantier having a little the advantage. Both of these were transplanted when one year old. A two-year Cherokee had roots covering a hundred square feet of soil! It had not been transplanted. Is it any wonder that roses like Mme. Lambard, Radiance, Marie Van Houtte grow as high as your head with trunks an inch or more in diameter in a single season from the graft? As for bloom, they never stop expect when the weather gets cold enough to check their growth.

The Double Cherokee is difficult to root, and on account of its thin bark, difficult to graft. The common White Cherokee is more easily handled in these particulars; in fact, there is little left to be desired. It is next to impossible to work other varieties on it by budding; it must be grafted. The thorny branches are formidable—the worst drawback in propagation—but that can be taken care of. It does not sprout readily, and for the Tea and Noisette rose area there is a strong probability that no better stock will ever be found. Yet for years this rose stock (R. laevigata) has gone unnoticed and untested. It is in no wise particular as to soil or moisture; it is not subject to disease. It has much to commend it. (The Cherokee, by-the-way, though "Wild" in many southern states, is not a native. It came originally from China, Formosa and Japan.)

The Macarthey rose (R. bracteata) does not look inviting as a stock. It has the serious drawback of rooting readily from the stems and throwing up many shoots from roots and underground parts. It often becomes a veritable pest. Its thorns are quite as formidable as are those of the Cherokee.

Rosa multiflora looks good. Some of the finest roses ever grown in the South were grafted on Crimson Rambler. These Japanese Multiflora seedling has fibrous roots of good depth. It certainly looks worth while, but we have not yet tested it here.

Rosa rugosa is useful for certain lines of rose propagation, particularly for the growing of standards. It roots readily from cuttings producing roots all along the cutting from the surface of the ground downward. (See Plate VIII.) Its hardiness is beyond question. The serious drawback to its use as a rose stock is its disposition to throw up many sprouts or suckers.

There are a number of other rose stocks in use. At least three are known, but what they are is not known, as they have not been critically studied.

Quite a number of roses not heretofore considered as possible rose stocks are worth trying out. Empress of China, for instance, looks as though it might be satisfactory. Fortune's Yellow is also a possibility. Banksia it not likely to be worth while. Its bark is too thin, and it does not root readily in open ground.

In this article, the main object in view has been to call attention to the importance of rose stocks in the production of American roses, and at the same time to emphasize how

Continued on page 5

Patronize The Garden Advertisers

Chrysanthemum Shows In Japan

(Extracts from the letters of Laurence G. Blochman, world traveler and writer.)

Tokyo, October 24, 1921.

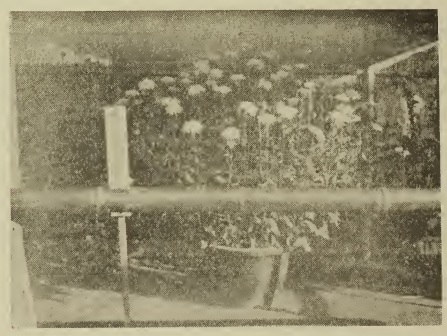
Saturday we went to the chrysanthemum show at Ryogokukan, an immense wrestling pavilion in the Honjio district. I went expecting to see great numbers of large blossoms and I was disappointed. Although the show was nothing short of wonderful, the chrysanthemums seemed to have been little more than an excuse for holding the exhibition. I have seen larger and more beautiful blossoms in San Diego—in our own garden, even.

At the Hibiya Park Chrysanthemum Show Looking 'em over.

We paid our 60 sen and walked along long aisles of displays of rather mediocre single blooms. Then we passed models of street cars, airplanes, automobiles, and geometric figures made from chrysanthemum plants and flowers, with the reinforcement of bamboo. Then came historic tableaux, in which ferocious Samurai, clad in garments made of tiny chrysanthemum blossoms and riding on horses made of greenery, hacked each other to pieces. The wax figures were remarkably lifelike. Between the tableaux were stands selling souvenir postcards, condensed soups, canned cuttlefish, and anything else you might want. Then we passed through a grove of paper cherry blossoms, through a large temple, and viewed more tableaux—attacking warriors burning the house of a Samurai; a woodland scene, where a real cataract tummled 50 feet between banks of chrysanthemums, about to be bridged by a coolie carrying a huge log,, so that a dainty maiden, clad in brocades of chrysanthemums, might cross. Priests in the snow, worshipping before a full-sized shrine—domestic scenes—all these figures life-size, and the humanness of expression was really fine.

Then we came into an auditorium where a marionette show was in progress. Although it was impossible to understand the story, the mechanical perfection exhibited in the handling of the life-size puppets and in the lightning change of elaborate stage settings, done so quickly that the lowering of the curtain was not even necessary, was a revelation. The grand finale was a ballet in which pink fairies with electrically-lighted wings danced on the stage, and the sliding of curtains and trapdoors converted the entire auditorium into a lantern-hung, dazzling garden.

The crowd pushed a little more insistently than American crowds do, but there were just as many children wanting to be held up to see, and just as much money foolishly spent as in an American crowd at a so-called industrial fair, where the rabble spends the afternoon collecting literature and eating free waffles fried by electricity.



135 Blossoms On This Plant.

November 5.

Yesterday we took in the chrysanthemum show at Hibiya Park, which was decidedly more of a floral exhibition than that at Ryogoku. The blooms were truly remarkable; enormous white balls without a blemish, crinkly bronze blossoms, wine-colored blooms of the flat type and big-petaled golden flowers. Then there was a variety I had never seen before, with petals like long silken fibres, which hung down like corn tassels of many colors. The large flowers were all limited to three blooms to a bush, the three stalks rising almost directly from the ground, supported to the height of four feet by slender bamboo poles. The top of the bamboo bore two concentric rings of wire upon which the corolla might rest. There were also bushes of fifty and a hundred blooms, arranged into symmetrical figures with bamboo and wire.

Patronize the Garden Advertisers.

A Few Of The Big Ones

GARDEN DRAINAGE

Our recent embarrassment of riches in the way of rainfall has discovered to many of us the badly drained portions of our garden-spots which only a heavy rain would disclose Sometimes it is possible to correct a condition of this sort; usually it is better to provide against it when planting is first done, although in some soils and certain locations it is extremely difficult. In shallow soils underlaid with a layer of hardpan the remedy is usually to blast through this "subsoil" to permit surplus water to drain away. In most places in Southern California this layer is usually thin and it is not a difficult matter to break through it to fairly good drainage beneath. The work should be done by an experienced man,—in fact, a good "powder man" can blast even after planting has been done, if this operation has been neglected before. In adobe soils, where the character of the soil is practically the same for a depth of fifteen, twenty or even thirty feet this suggestion does not apply. The only solution

Continued on page 10

Brought Nut from Australia

Southern Florida had no native nuts except the coconut, so the Department of Agriculture brought the Queensland nut from Australia. It flourishes in its new environment, where it is being cultivated and propagated by the Bureau of Plant Industry. The same office is busy with a giant blackberry from Bogota and a dry-land elm from China. The elm has already demonstrated its usefulness, for it grows well in regions that are too arid to support other forest growths. A quality which adds to its value is the ability of this elm to withstand severe windstorms without injury. This feature will enable the tree to grow on the western plains, where the heavy storms up-root and destroy less tough species.

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——BUY W. S. S.——

A LETTER FROM NORTHERN CALIFORNIA.

(Editor's Note:—The accompanying letter was written for a much earlier number of the Garden, but was inadvertently "crowded out" until now. We publish it even at this late date, as the subject matter is interesting at any time, and will perhaps bring back pleasant memories of the spring past, and pleasant anticipations of the one to come.)
To a Friend in San Diego:

After my travels I am glad to find myself once more in San Diego,—in spite of all the lovely wild flowers I have gathered and seen. The journey up from Los Angeles to Monterey was a thing of beauty; for the wild radish made a carpet of pink and lavender on each side of the railway, intermingled with huge patches of yellow mustard which ran up the foothills. I had never seen either of them in such masses before, and it certainly was a revelation. Carmel-by-the-Sea, which was the end of my journey is surely a wildflower garden. The Manzanita and Lilac (Ceanothus) growing up to the doorsteps, and, owing to the cool, damp climate, are very green and luxuriant. I was assured by the Carmelites that the great beauty of the wild flowers was past, but there were plenty of lovely ones just the same. The bluffs on the shore were like a persian carpet with Beach Asters, pink and yellow, San Verbenas and great patches of Indian Paintbrushes more than eighteen inches high—of several shades of red and beautiful yellow ones. The Armeria was nearly over, but I gathered plenty of seed of which I now (August) have some coming up in a seed box. A little further back from the shore grew big bushes of the shrub variety of Lupin—yellow and blue, all mixed up with Lilac and Manzanita. The latter were over except for a few stray blossoms which gave one an idea of what had been. The background of all this in Carmel itself is Monterey Pine, in which the houses are often inclined to bury themselves. The hills and valleys all round are wonderful. One day a friend of mine, also an enthusiastic flower lover, walked to the San Jose Valley—about nine and one-half miles away—where, at the wide entrance, the bush lupins were unusually fine and of many colors—blue of all shades, yellow and pink, and a few white. As the valley narrows the steep sides were a riot of color from Larkspur, Gilia, Clarkisa, Paintbrushes, Collinsias, Godetias and many more that I do not remember. The farmers in this district have an unpleasant habit of letting their bulls wander about quite freely in their fields and canyons and the last time my friend had been flower hunting with another woman they had been quite scared by one and crept along by the tall lupin bushes in fear and trembling, so we kept a weather eye open for the gentleman. However, we only encountered some quiet milking cows and an old billy goat and finally arrived home tired, but rejoicing in our treasures of flowers and seeds, to say nothing of pleasant memories.

MRS. WALTER YATES.

ROSE STOCKS AND ROOT SYSTEMS

Continued from page 2

little we really know about the question. In the foregoing paragraphs, attention has been called to a number of stocks. But who in America today can speak with any authority concerning their behavior in different parts of the country? Who knows their limitations as related to the varieties which may be grown upon them? No one! No one can take the eight merit tests given above and intelligently criticize the stocks now in use. No one has yet undertaken to determine in a large and general way the merits of many untried but perhaps worthy possibilities. It is perhaps too difficult a problem for private solution.

What we need as a comprehensive and exhaustive test of rose stocks in different parts of the country. It will not do to say that every question can be answered, but if a rose-grower in each of several states covering general rose-growing conditions will agree to grow and test at half dozen or more available stocks for soil, climate, and variety adaptations, and if this information can in a few seasons answer with some authority the question: "What is the best rose stock to use in my part of the United States?" The American Rose Society can undertake no more worthy piece of work than this.

Again, if there are not satisfactory rose stocks for certain conditions, there is no question but that they can be produced just as surely as we can produce new varieties of roses to meet certain requirements. It is a worth-while field for the rose breeder. No one knows better than the writer now hard it is to change fashions in plants, but new rose stocks must displace some of the old rose stocks if we are to meet with real success.

It's Just A Small Book.

of 16 pages. "Ornamental Plants for Landscape Planting" is eager to acquaint you with the best varieties of plants for landscape use.

But It's Worth Asking For

Because it gives sound advice on the subject of developing the home grounds.

THE WEED LANDSCAPE NURSERY.

Beaverton, Ore.

WATER GARDENING

By F. B. Taylor.

Water gardening is conceded to be the most interesting and altogether enjoyable work connected with the art of horticulture. It is the vast wealth and diversity of color and the great range of beauty coupled with the unique manner of flowering that places the water lily upon a pedestal supreme in the realm of owerland. Some varieties unfold their blossoms when touched by the first rays of the morning sun, while others are, too, delicate to withstand its strong rays so they bloom in the stillness of night.

The charms of the babbling brooks, lakes and ponds have been sung by poets and authors throughout the ages, but it has just been of recent years that the inherent worth of the water gardening proper has become fully appreciated as part of the adornment for public and private parks or grounds.

The varieties differ greatly in the time of day in which they bloom. Some of them bloom early in the morning, others still later in the morning, these remaining open the greater part of the day; Nymphaea Lotus, Nymphaea rubra and their vast number of varieties unfold their petals at eventide, remaining open all night and to almost noon the next day; the Victoria regia also, blooms in the evening.

Another way in which water lilies differ from each other is in the length of their flower stems. Many of the blossoms float on the surface of the water; others have stems measuring from three to fifteen inches above the surface, the blooms ranging in size from

Continued on page 9

One of the Lily Ponds

Water lilies in their wild state are found in nearly all of the countries of the world. From South America we get the well known Victoria regia; from Mexico, Nymphaea Mexicana and Nymphaea gracilis; from the United States come the Nymphaea odorata, Nymphaea tuberosa, Nymphaea flava and Nymphaea elegans. We get from Europe the white lily Nymphaea alba; the red-colored Nymphaea alba rosea comes from Sweden; also Nymphaea candida from Bohemia. Away in far off Australia comes one of the finest of the blue water lilies, Nymphaea gigantea. From China we get the little Nymphaea pygmaea; from India the deep, red-colored night flowering Nymphaea rubra, likewise the first cousin of the Victoria regia, Euryale ferox; from Egypt the Nymphaea Lotus, and from Africa are obtained the purple Nymphaea Zanziborensis.

THE CHANGELING

A rift of golden sunshine
Came shimmering thro' the trees.
And lay on earth's cold bosom,
A caprice of the breeze.
The purpling dusk enwreathed it,
An angel flitting by
Bent a loving glance upon it,
Left the reflex of her eye.
And Sorrow wand'ring sadly,
Somber stoled, 'mongst soughing leaves,
Felt her heart grow light with gladness,
Felt from pain a sweet release,
As she stooped to pluck yon changeling * * *
Pluck * * * and wore a sweet "heart-ease."

R. T. NATHAN.

——BUY W. S. S.——

Patronize the Garden Advertisers.

Dr. John Torrey; The Beloved Professor

Lena B. Hunzicker
Reference Librarian, San Diego Public Library

careers of a number of America's botanical explorers yet none certainly was more beloved than Dr. John Torrey, by profession, first, a physician and surgeon, later a professor of chemistry and mineralogy, but whose real claim to fame rests on his non-professional work in the field of botany.

Dr. Torrey was descended from an old New England family, very probably from William Torrey, who emigrated from England and settled in Weymouth, Massachusetts about 1640.

New York City is the place of his birth and August 15, 1796, the date. Of his boyhood days we know that he attended the public schools of his native town, and later was sent to school for a year in Boston. When he was about sixteen, the Torrey family removed to Greenwich, where the father had received a state appointment.

Here it was that the lad first became interested in the study of botany through the deep interest shown in him by Professor Amos Eaton. In 1815 Torrey began the study of medicine. After graduating in 1818 from the College of Physicians and Surgeons of New York City, he opened an office there, meeting with moderate success. His leisure time, however, during these preparatory years gave him the opportunity of pursuing his favorite hobby, botany, which was later extended into the study of mineralogy and chemistry.

The botanic result of these college day studies was his "Catalogue of the Plants Growing Spontaneously Within Thirty Miles of the City of New York", reported in 1817 to the Lyceum of Natural History of which he was one of the founders. Also his botanical interest during these years was greatly increased by his correspondence with such scientists as Kurt, Sprengel, Elliott and Nuttall.

It was Elliott's sketch of the botany of South Carolina and Georgia which suggested to Dr. Torrey the idea of publishing a systematic work on North American Botany, with the result that he published the first volume of his "Flora of the Northern and Middle Sections of the United States". In this work Dr. Torrey developed and proved his remarkable ability for descriptive botany.

In 1824, following his marriage to Miss Eliza Shaw, Dr. Torrey went to West Point, where he had been appointed to a professorship in chemistry, mineralogy and geology in the United States Military Academy. After three years in this position he returned to New York City to take up his duties on the faculty of the College of Physicians and Surgeons.

In the meantime, during the leisure hours of his professional life, Dr. Torrey's studies extended to the botany of the Great Plains and Rocky Mountain Region. This was made possible through the collections of Dr. Edwin ames, who had been the botanist of Major Long's expedition to the Pike's Peak region in 1820.

To the Lyceum of Natural History, Dr. Torrey reported in 1823 some new species of this expedition and three years later as extended account of the plants collected, arranged according to the natural order. Asa Gray, for many years his associate, says, "This is the earliest treatise of this sort in this country arranged upon the natural system; and with it begins the history of the botany of the Rocky Mountains, if we except a few plants collected early in the century by Lewis and Clark, where they crossed them many degrees further north and which are recorded in Pursh's Flora".

His recognized knowledge of the flora of his native state resulted in 1836, when the New York Geological Survey was established, in his being appointed botanist. The new office entailed the necessity of preparing a flora of the state. At last, after seven years of more or less discouraging work, this was completed and published in two large volumes, including one hundred and sixty-one plates.

It is an interesting bit of gossip to learn that during the earlier part of his career, Dr. Torrey had asked Professor Nuttall to help him in the preparation of a general flora of North America, but to this the latter for some reason did not consent.

From 1836 on, professional duties became so heavy that Dr. Torrey found his time for botany more and more limited, for in addition to his professorship in the medical college, he was occupying a similar one at Princeton College as well as carrying on his duties as state botanist.

No doubt it was the press of professional duties as well as an appreciation of the knowledge and ability of Asa Gray, which in 1836 or 37 led him to invite Gray to collaborate in the preparation of his Flora of North America. Part I of the work appeared at intervals from 1838-40; Volume II was published in 1841-2 and Volume III in February of 1843.

After 1845 his botanical work consisted largely in the publication of memoirs and reports of botanical collections made by various exploring expeditions to the far West, particularly those made by Captain John C. Fremont, the Pacific Railroad expedition and the Mexican Boundary Commission; 1855 saw him president of the American Association for the Advancement of Science.

In 1857 Dr. Torrey became United States Assayer in the Treasury Department in which capacity he was of invaluable help to the government, especially in matters relating to

counterfeiting, or in performing some delicate or confidential commission requiring great skill and tact.

It is pleasing to know that during the last eight years of his lifetime Dr. Torrey had the privilege of enjoying in their native environment many of the flowers he had so loved and studied; for twice he came to California by way of the Isthmus, once having been sent by the Treasury Department to recruit his failing health.

On several other occasions he had gone to Florida, true it was in search of health, yet each time filled with enthusiasm for his favorite study of botany. On one return from the South he is said to have remarked, "Give me the Fountain of Old Age. The longer I live the more I enjoy life."

Certainly his declining years were honored in many ways, not only by being made a member of numerous scientific societies both abroad and at home, but he was appointed as Emeritus Professor at Columbia College as well as being for many years a faithful and very important trustee of that college. To Columbia he gave, before his death, his large and invaluable herbarium as well as his splendid botanical library.

In 1841 Dr. Torrey was made a member of the American Academy, and late in 1863, when the National Academy of Science was organized by Congress, he was one of the original members. Perhaps no man in the field of science was more beloved by his students and associates than this indefatigable professor, whose thirty years of earnest and able work as a teacher was "proved and widely known through a long generation of pupils". "As an investigator he was characterized by a scrupulous accuracy, a remarkable fertility of mind, especially as known in devising ways and means of research and perhaps by some excess of caution."

What more fitting than that his memory be always kept green by the many plants named in his honor and especially by four of our most highly-prized ornamental evergreen trees, one a native of Florida, one of California, one of China and one of Japan as well as the world famous Torrey Pine within the borders of our own city.

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HAS GOLDEN ROD PLANTS

Mrs. M. A. Greer, 2972 First street, has a surplus of Golden Rod seedlings, available upon request. Her telephone is Hillcrest 1550-J.

THE BULB SHOW SOON

Keep it in mind—

THE SPRING FLOWER SHOW

¶ *HELP MAKE IT AN EVENT* ¶

EL MONTE OAKS

In accordance with an informal agreement made last year, the County Board of Supervisors has purchased the tract of 55 acres known as El Monte Oaks and set it aside as a public picnic grounds. The property was bought at the time that this unofficial arrangement was made with the Supervisors and paid for with a note made by members of the committee appointed by the Floral Association at the time when the beautiful oaks, which give the property its name, were about to be converted into firewood. The note having been paid by final action of the County Board, the property passes into the hands of San Diego County.

In order to assure the purchase of this tract by the county, the Floral Association obligated itself to finance certain improvements necessary to make the park really useful, and in fact, sanitary for use by the public.

To establish proper facilities, such as comfort stations, water supply, fire protection and other necessities, a fund of approximately $5000.00 will be needed. Letters of appeal have been sent to a selected list of those whom the committee feels would be interested in the project to the extent of contributing to this fund. If the recipients of this appeal, and others desirous of preserving such beauty spots, respond as the committee believes they will, a sufficient fund is an assured fact.

The committee is of the firm opinion that it is only a question of presenting the facts of the case, and the money will be forthcoming. This particular appeal is unique in that people are being asked to do something—not for some far off nation in some remote corner of the earth—but for themselves, and their children, and their children's children.

Contributions or pledges may be given to any member of the El Monte Oaks committee of the Floral Association named below, or to Mr. Wm. P. Brothers, Treasurer, Boston Store or Box 323 San Diego.

G. W. Marston
Ed. Fletcher
Hugo Klauber
W. Templeton Johnson
G. R. Gorton.

WATER GARDENING

Continued from page 6

the little Nymphaea pygmaea of two inches to that of the wonderfully large Nymphaea dentata of fifteen inches in diameter.

The plants differ again in the characteristics and color of their foliage. Many have oating leaves, while the Nymphaea tuberosa ancestry and others have theirs raised above the surface, especially the center leaves. Some of the leaves are green, others are reddish bronze, while still others have chocolate-colored spots placed here and there on a background of green.

With all this vast variety of beauty is it no wonder that water gardening both vegetable and finny stands supreme in interest and fascination above the other pursuits of horticulture?

Pool Building

The supply of water is an important factor to be considered when selecting a site suitable for a pool or pond. As water lilies are a very delicate vegetation it is necessary to have the site sheltered by buildings or by trees and shrubs, but far enough away so that they do not over-shadow the pool. The north, northeast and northwest of the pool should be sheltered leaving the south, southeast and southwest open to the warming influence of the sun's rays which is so much needed for the tender varieties. However, if the pool is intended for the hardy kind only this protection will not be necessary as they thrive in a lower temperature and are not so easily distrubed by the wind.

Now, since a suitable site has been chosen, the pool should be outlined by driving stakes around it two feet apart. A level should then be taken which can be determined by three things—the surface of the ground, the supply of water or by some natural feature. Most water garden experts advocate the pond being a trifle below the level as that affords planting of vegetation to the water's edge, which gives it a natural appearance. It is best to secure the service of a surveyor to run the levels as that will insure exactness of work.

If the walls and bottom of the pool are to be cement the best material that can be used is Portland cement. When using cement another row of stakes should be placed opposite and six inches from the first row. The trenches can then be dug, the walls of which can serve as artificial molds for the walls of the pool. This should be done though gefore any of the other excavating has been started. The height of the wall when finished can either be carried up to form a coping or leave it six inches below the surface of the ground. The latter presents a much more natural appearance as grass or other plants can be grown right up to the water's edge.

The concrete used in the walls should be composed of one part portland cement, one-fifth as much hydrated lime as cement, three parts sand, four parts gravel and three parts broken stone. The sand and cement are mixed first and this is done by turning until thoroughly incorporated; then the gravel and broken stone are mixed with the sand and cement. The entire mixture should be turned several times in order that each of the four ingredients will become thoroughly intermixed, after which a little water should be added and then the entire mixture turned again until it resembles a sticky paste.

One of the main points is to get the wall solid and in order to secure that it must have a good foundation, so in the case of soft ground, large stones can be rammed in to make it solid. When this is ready the concrete may be brought to the excavation in wheelbarrows, poured in and then rammed into a sound position.

After the wall has become dry the pool itself may be excavted. At one end of the pool and at the bottom a large pipe should be placed to draw off the water when draining it, and to attach the overflow. It is also wise to have a good-sized hole below the level of the pipe, to be a refuge for the fish when the pool is being emptied. The concrete used for the bottom is the same as for the walls and should be five inches thick. As it stands the walls and bottom are only in the rough, then a half-inch coating of cement should be applied. This is made by using one part of Portland cement to three parts of very fine sand, mixed with water and then applied to the surface making it perfectly smooth.

Planting the Roots

Most aquatic plants are thrifty feeders and to make the soil too rich is almost an impossibility. However, any soil that will grow vegetables will, if properly fertilized, grow fine water lilies. A compost consisting of two-thirds good loam and one-third thoroughly decayed manure is strongly recommended for aquatic plants. Black friable loam is very good. Also, poultry manure at two years of age in a mixture of one-sixth manure to five-sixth soil is excellent for Nymphaea. Commercial fertilizers are also used to good advantage.

Gypsum has come into prominence as a lily food and is used in connection with other fertilizers. In the spring when the pool gets its overhauling gypsum is applied to the surface of the soil and with seemingly benefivial results. It also helps keep the water free from green scum (confervae) during the summer months.

Planting the lilies in soil in tubs or boxes is the best method of growing them as then the caretaker has room to walk among the boxes without injuring the plants. Nymphaea

Patronize the Garden Advertisers.

pygmaea, Nymphaea pygmaea helvola, Nymphaea Laydekeri rosea, Nymphaea Laydekeri purpurea, Nymphaea Laydekeri lucida and the like are planted in boxes two by two feet by one foot deep and the boxes placed four feet apart. Large growers like Gladstoniana, and Marliacea chromatella are usually planted in boxes three by three feet by one foot and these placed six feet apart measuring from center to center.

If boxes or tubs are not available any good, strong barrel may be used if cut in two. After filling the vessels with soil they should be carried to the pool and set in place. The lily roots are then planted at a depth of from two or three inches and the entire surface covered with one inch of coarse sand.

After everything is in readiness, i. e., the lilies planted and boxes placed properly, the water can be let into the pool, covering the crown about four inches. This is ample water until the plants start to grow, then the pool may be filled. Great care must be taken in order that too much cold water is not let in at once as it would be disastrous to many of the tender varieties.

The hardy lilies are almost no trouble at all the first two years. All that is necessary the following spring is to remove the sand and place a goodly supply of cow manure on top, then replace the sand. However, the next year the boxes should be entirely refilled with new soil and the roots divided and planted again.

Here are a few of the best hardy lilies: Nymphaea Marliacea rosea, pink; Nymphaea Marliacea albida, white; Nymphaea Marliacea chromatella, yellow; Nymphaea gloriosa, red; Nymphaea odorata Caroliniana, flesh pink; and Nymphaea Robinsoni, orange red.

A pool of lilies only would not be complete from an ornamental standpoint. Submerged plants such as Anacharis canadensis gigantea and Cabomba viridifolia should be in every pool, pond or lake, as they aerify the water, thereby keeping it pure and sweet. Fish are another necessity for an aquatic garden as they destroy the mosquito larvae and other insects which are bound to accumulate around water. Gold fish are much preferred, being useful and ornamental combined.

Green scum is sometimes an unsightly menace, especially after new soil or manure have been put in the pool. There are several ways of eliminating this scum, one being to apply an extremely weak solution of sulphate of copper to the water with a syringe. If it should still persist allow a stream of water to run through the pool for a day or two and that will surely eradicate the trouble as this particular algae thrives on warm still water.

Too much stress cannot be laid upon the temperature of the water where the tender varieties of water lilies are being grown. They are tropical plants and thrive best when the temperature is around eighty degrees.

In water lily culture as in other persuits it is not so much the need of technical knowledge as it is the use of good, old, God-given common sense, which nets the user the greatest amount of success.

BULB SHOW—

will probably be held in MARCH

Watch for further Announcements.

GARDEN DRAINAGE

Continued from page 4

under such conditions is to provide for the best drainage away from the plot, if that is possible, and it frequently is not. Under certain conditions drain-tile can be utilized to good advantage if the soil is not so heavy it cannot be drained by this means, and here again the services of an experienced man are indicated.

If the badly drained area comprises only a small portion of the garden, sometimes a slight change in the grade will suffice. Trees which have been basined for irrigation purposes should be watched during extra heavy rains to see that the water does not stand around them for too long a time.

Spraying and Pruning

Correct Spraying and pruning practiced with perfect safety and accuracy at all times.

Tree surgery in most approved forms.

Broken limbs of trees and shrubs adjusted so they will restore the beauty and symmetry of the subject. It is not necessary to cut a limb off entirely because of a break through excessive load of fruit or vandalism. Invariably if a few inches of tissue is adhering to parent bole the limb can be saved.

E. L. KILEY

P. O. Box 633, San Diego, Cal.
Phone 657-14 before 7 a.m. or after 8 p.m.

BOYS' AND GIRLS' PAGE

HUMUS ACTS AS A SPONGE

The Soil is a Vast Workshop in Which Billions of Tiny Germs Called Bacteria Are Working to Bring About the Making of Plant Food—How to Improve Sandy Soil.

(Written for the United States School Garden Army)

You have often heard of soils so poor that they would scarcely grow a hill of beans. Generally such a soil is a good deal like a sand bank. It is light in color and is made up of fine sandy particles.

Such soils have several faults when you try to grow garden crops in them. The chief faults are the fact that water runs through so quickly the plant roots suffer in dry weather and the fact that there is very little plant food present for the roots of the plants to absorb. Now, plants are like humans in this respect—to grow well they need a continual supply of water and food.

The one important way to improve a sandy soil is to add humus to it. As compared with ordinary, rich, dark-colored garden soils, the great lack of these sandy soils is humus.

So the first thing to do to improve a sandy soil is to add humus and work the soil over and over again to get the humus thoroughly mixed with the particles of sand. When this is done the soil will hold moisture better, because the humus acts as a sponge in catching and holding the water as it filters through the soil. So one great step will be taken in making the garden more productive.

The plant or animal materials—leaves, lawn clippings, manures, composts—that you add to the soil to make humus are generally not in condition to be used immediately by plant roots. For the soil is not simply a mixture of fine rock particles and dead leaves. It is rather a vast workshop in which billions of tiny germs, called bacteria, are working to bring about the making of plant food. Even the wisest scientists do not pretend to understand all about how it happens, but they assure us that the humus is the basis of existence of a large proportion of these helpful germs.

(To be Continued)

Exhibits of Flowers from Childrens Gardens will be at Spring Flower Show

Letters From School Children

(Furnished by Department of Agriculture, San Diego Schools)

HOW TO MAKE A GARDEN

The first thing you do to make a garden is to make up your mind that you are going to tend to it and not forget to water it because flowers need water as much as we do, and it does not take much work.

People that do not have flowers in their yard are the ones that do not care about their homes.

Your home is not a home without flowers.

A house with flowers in the yard is the house of beauty and a pleasure to look at.

No matter how large the house is nor how much money has been spent in designing it—it is not good to look at if it has no flowers.

A rickety shack with flowers around it is far more attractive than a beautiful house without flowers.

ROBERT HOOKER.
6B Grade, Logan School; 12 years.

FRIENDS OF THE GARDEN

There are many friends of the plants. Angleworms are very useful because they loosen the soil for drainage by moving about all the time. They are just little plows.

Ladybugs eat the aphis that are on so many of the plants, and don't you get them mixed up with the diabroticas just because they look somthing like them, for they are just as bad as the ladybug is good.

Toads do not do a bit of harm, but do lots of good by eating flies and other insects.

Birds are just as good as policemen in a garden, because they eat so many bugs.

Never kill any of them because they will do much good for you.

VIOLA GAYTON, Jan. 5, 1922.
6B Grade, Stockton School.

PLANNING OUR FLOWER GARDEN

We planned our flower garden in this way: We went to the board and each one made his own plan.

Then we picked out the best one. After that we went to the garden and worked out this plan. The money we get from selling the vegetables we buy flowers and other plants to make the buildings pretty.

HENRY MORIN, 11 years.
Logan School, 6B Grade.

Continued on next page

Patronize the Garden Advertisers.

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G. R. Gorton, Editor
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PROPAGATION BY SEEDS

Everybody knows there are many kinds of seeds.

The way we propagate plants by seeds in our lath house is to first sift nice rich dirt through a screen, and sometimes we mix some sand with it. Then we put into a box or flat, and pack it and level it with a float. A float is a small flat board with a handle on it. Then we either plant the seeds in little drills, or scatter them over the top of the dirt and cover them with just a little dirt and smooth it over again with our float.

When the seeds come up, as soon as they are big enough, we put them into little pots or into another flat. This is called "pricking off". When they get too big for the pots we put them into the ground. Sometimes we sell them. Many people buy them. We do many other things, but this story would be too long if we told everything.

ELIZABETH HOLMES.
6B Grade, Stockton School.

WHAT HAPPENED TO FARMER SMITH'S GARDEN

Farmer Smith didn't know how to get rid of his garden enemies, and that is why all this commotion came about.

The aphis were having their supper on a cabbage leaf. There were too many there to name, but the king's name was Mr. Littleman, because he was so small.

"You are too greedy,' 'he said, "why don't you let me have some food?"

This, of course, made the rest angyr, because the king was really eating the most.

Billy Toad heard some noise over by the cabbage patch, so he quickly hopped over to see what was the matter. When he got there and found all those aphids, he said, "Here's where I'll get my dinner." So out flew his little tongue, and the aphids quickly disappeared.

Farmer Smith happened to be out in the garden at the same time that Billy Toad was eating his dinner, and when he saw what Billy was doing, he decided right there, that Billy Toad was his friend.

HELEN PUTNAM.
6B Grade, Stockton School.

Floral Association Meetings

February 21, 1922. at 8:00 P. M.
Subject: WALL GARDENS

Place of Meeting will be announced later, watch daily Papers

PROPAGATION OF BULBS

This story is going to be on bulbs. When I think of bulbs, I think of lilies, because that is the way lilies are propagated. Now I will tell you what we did with the bulbs at our school.

We took the flower pots we were going to put the bulbs in, and put some broken pottery in the bottom of them. This is for drainage. Then we put in some dirt, but we did not fill the pot full of dirt because we had to put the bulbs in. After we had put the bulbs in we put some more soil on top of them. Then we set the pots in a dark place. This was to make the roots stronger. After about three weeks we took the pots out of this dark place and put them in a sunny spot to make the plants come out of the soil. When the plants were big enough we took them to the different rooms in our school so all the children could enjoy their pretty flowers.

GERTRUDE FAGER.
6B Grade, Stockton School.

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Harold A. Taylor

1154 Orange Ave. CORONADO Hotel del Coronado

SUN CURED GLADIOLUS BULBS

In order to introduce my Gladiolus bulbs to the readers of the California Garden magazine I am making the following exceptional offer: **ONE DOZEN GLADIOLUS BULBS** for **ONE DOLLAR**, postpaid to any address in the United States. Each dozen bulbs will contain at least one each of the following: Light pink, dark pink, white, cream, light red, dark red, and yellow.

RALPH F. CUSHMAN

Grower of Gladiolus,

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